

1A, 40V - 150V Schottky Barrier Surface Mount Rectifier

FEATURES

- AEC-Q101 qualified
- Low power loss, high efficiency
- Ideal for automated placement
- Guard ring for overvoltage protection
- High surge current capability
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free

APPLICATIONS

- Low voltage, high freq. inverter
- DC/DC converter
- Freewheeling diodes
- Reverse battery protection
- Car lighting

MECHANICAL DATA

- Case: SOD-123W
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 0.016g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	1	A
V_{RRM}	40 - 150	V
I_{FSM}	30	A
T_{JMAX}	125, 150	°C
Package	SOD-123W	
Configuration	Single die	



SOD-123W



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
PARAMETER	SYMBOL	SS14LWH	SS16LWH	SS110LWH	SS115LWH	UNIT
Marking code on the device		14LW	16LW	10LW	A5LW	
Repetitive peak reverse voltage	V_{RRM}	40	60	100	150	V
Reverse voltage, total rms value	$V_{R(RMS)}$	28	42	70	105	V
Forward current	I_F	1				A
Surge peak forward current, 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	30				A
Junction temperature	T_J	- 55 to +125	- 55 to +150			°C
Storage temperature	T_{STG}	- 55 to +125	- 55 to +150			°C

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\theta JL}$	25	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	80	°C/W

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage ⁽¹⁾	SS14LWH	$I_F = 1\text{A}, T_J = 25^\circ\text{C}$	V_F	-	0.55	V
	SS16LWH			-	0.70	V
	SS110LWH			-	0.80	V
	SS115LWH			-	0.95	V
Reverse current @ rated V_R ⁽²⁾	SS14LWH	$T_J = 25^\circ\text{C}$	I_R	-	100	μA
	SS16LWH			-	10	μA
	SS110LWH			-		
	SS115LWH			-		

Notes:

1. Pulse test with $PW = 0.3\text{ms}$
2. Pulse test with $PW = 30\text{ms}$

ORDERING INFORMATION		
ORDERING CODE⁽¹⁾	PACKAGE	PACKING
SS1xLWH	SOD-123W	10,000 / Tape & Reel

Notes:

1. "x" defines voltage from 40V(SS14LWH) to 150V(SS115LWH)

CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.1 Forward Current Derating Curve

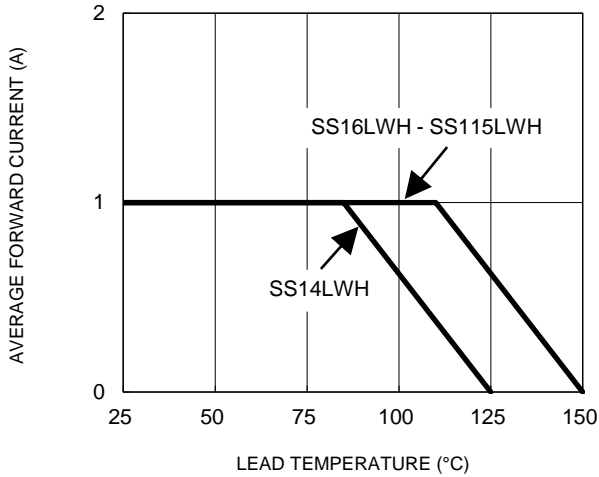


Fig.2 Typical Junction Capacitance

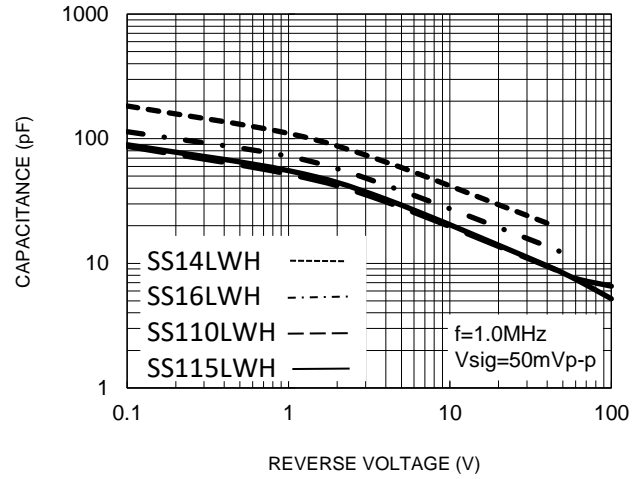


Fig.3 Typical Reverse Characteristics

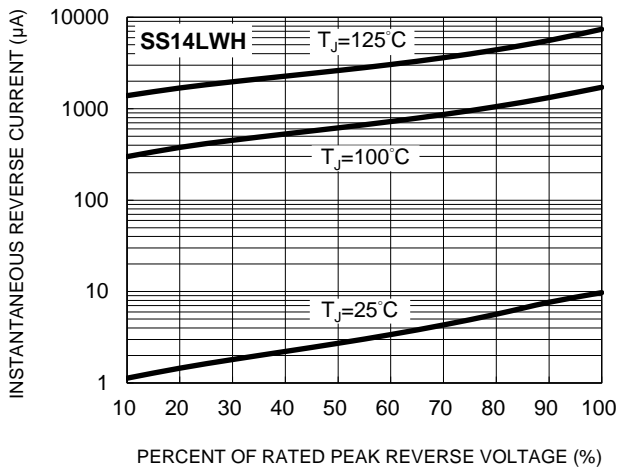


Fig.4 Typical Forward Characteristics

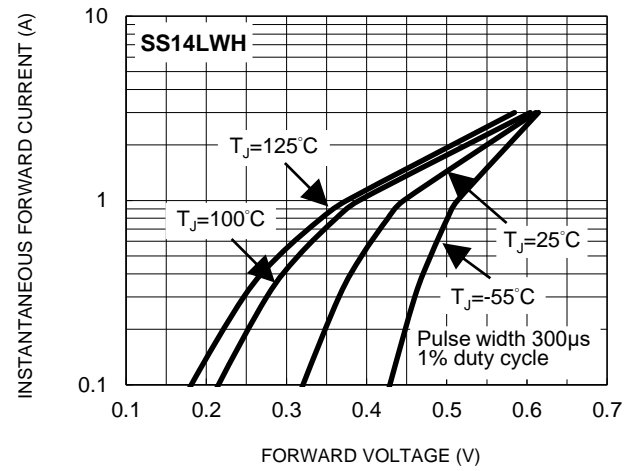


Fig.5 Typical Reverse Characteristics

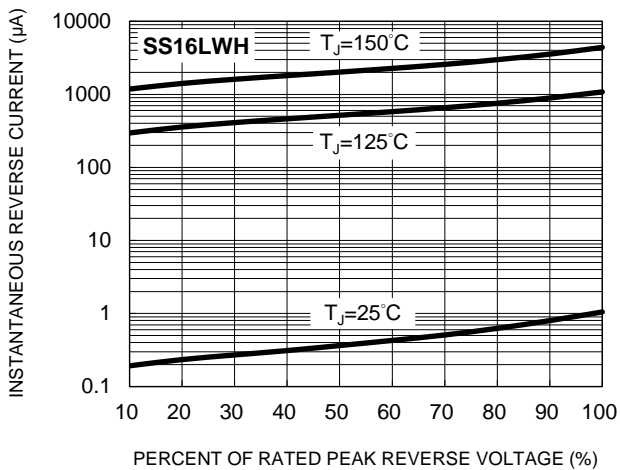
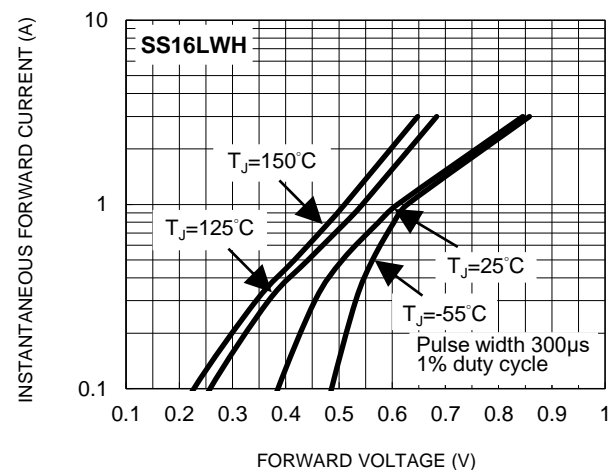


Fig.6 Typical Forward Characteristics



CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.7 Typical Reverse Characteristics

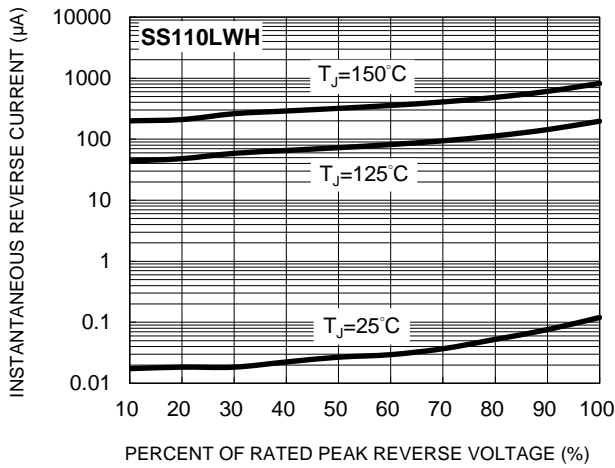


Fig.8 Typical Forward Characteristics

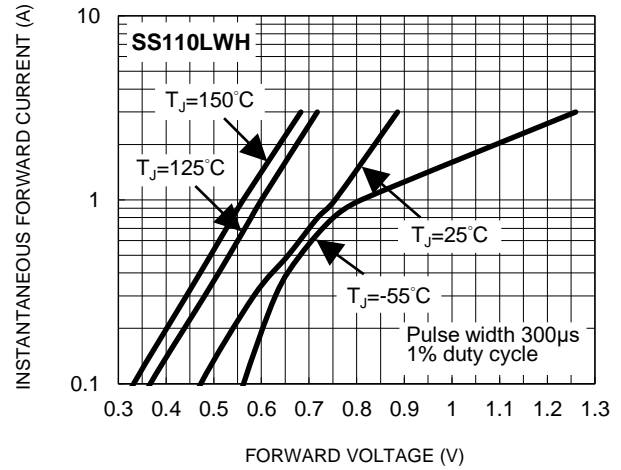


Fig.9 Typical Reverse Characteristics

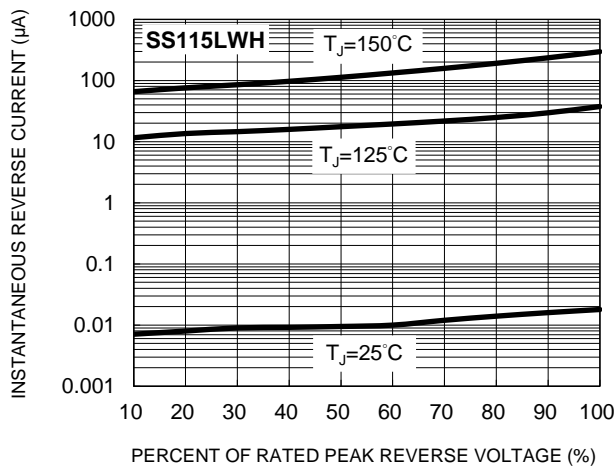


Fig.10 Typical Forward Characteristics

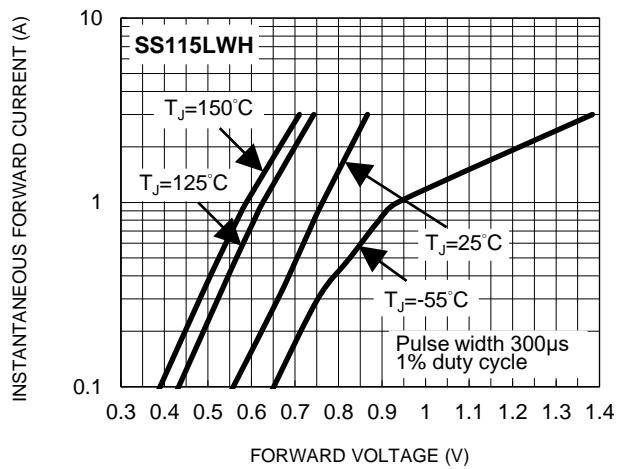
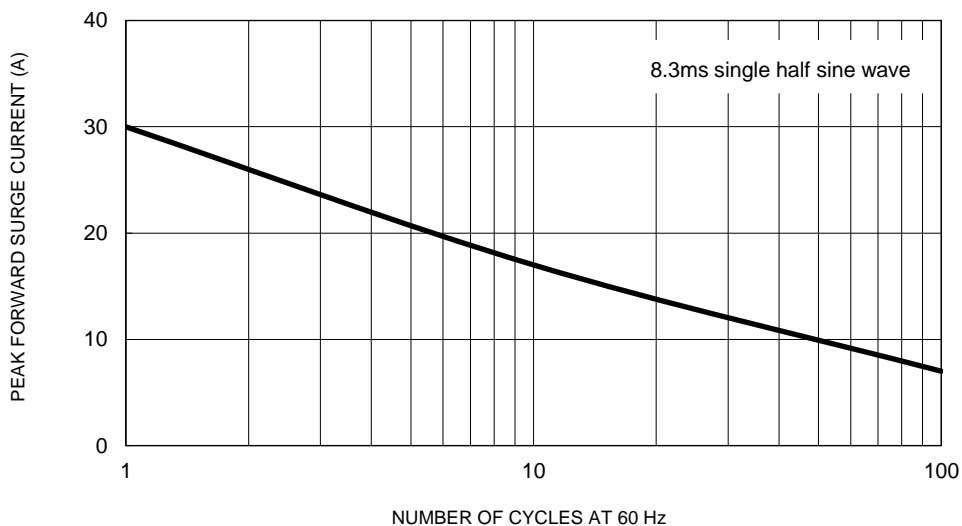
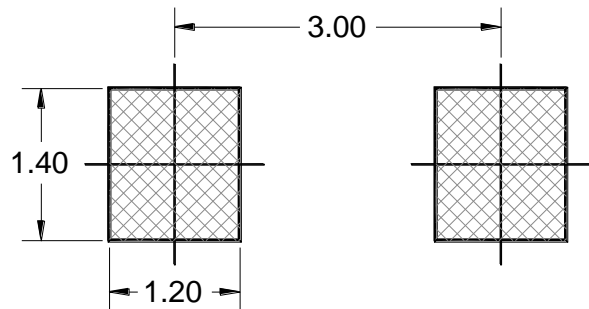
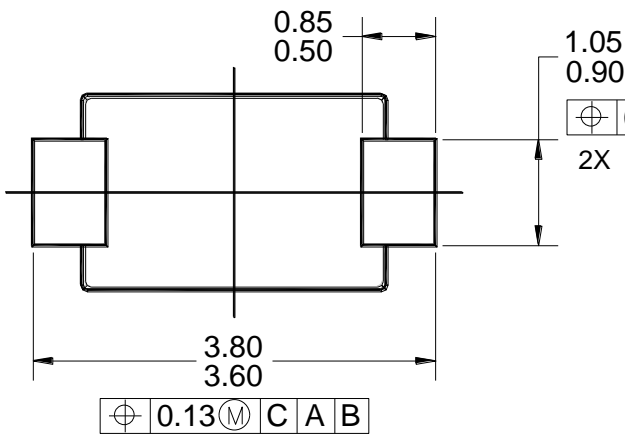
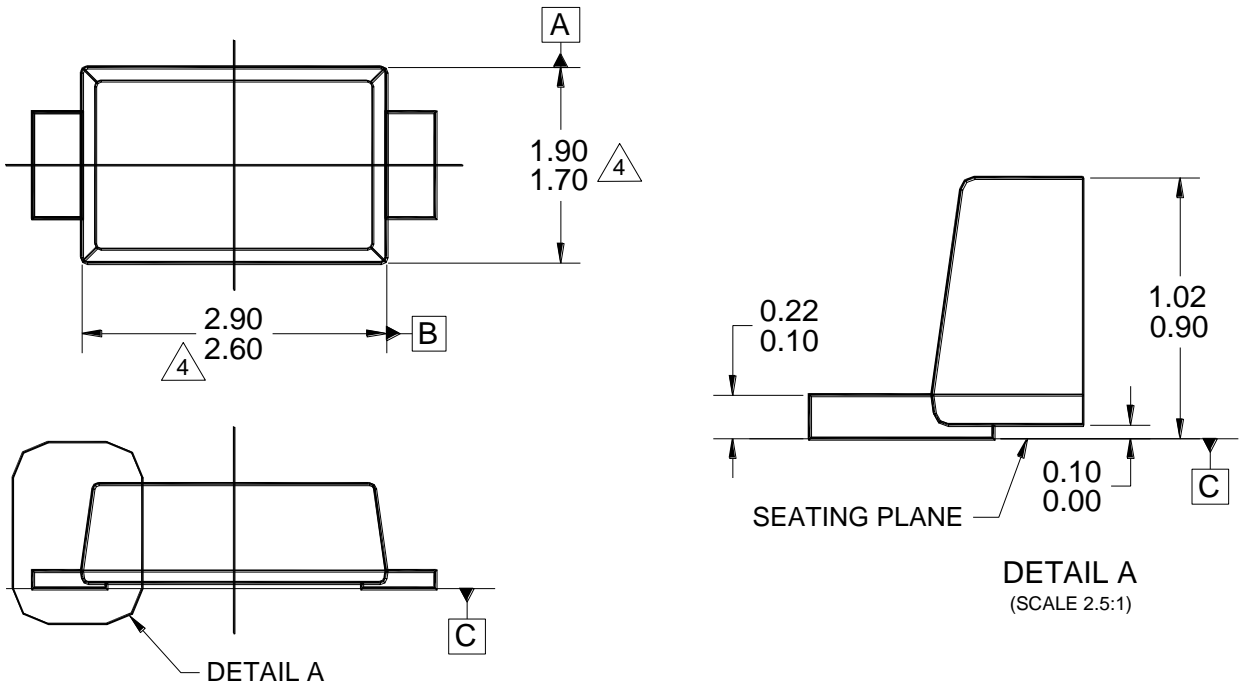


Fig.11 Maximum Non-Repetitive Forward Surge Current

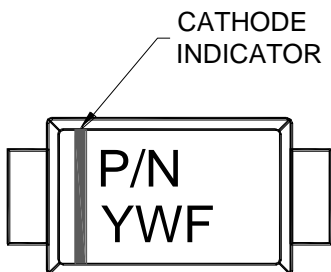


PACKAGE OUTLINE DIMENSIONS

SOD-123W



SUGGESTED PAD LAYOUT



MARKING DIAGRAM

P/N = MARKING CODE
YW = DATE CODE
F = FACTORY CODE

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-2009.
3. PACKAGE OUTLINE REFERENCE: JEDEC DO-219, VARIATION AB, ISSUE C.
4. MODDED PLASTIC BODY DIMENSIONS DO NOT INCLUDE MOLD FLASH.
5. DWG NO. REF: HQ2SD07-SOD123W-037 REV A.

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